



Abstract

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PI Title:

Project Title: ANOREXIA AND WEIGHT LOSS DURING ACUTE INFLAMMATION

Abstract: *DESCRIPTION (Adapted from the Investigator's Abstract): Anorexia and accelerated catabolism leading to marked loss of body weight are common manifestations of the systemic inflammatory response to traumatic injury, infection, and cancer. Loss of protein translates into loss of tissue function because body protein has no inactive storage form; thus, extended periods of inflammation have the potential of increasing morbidity and mortality. Much remains unknown about the in vivo interaction of proinflammatory cytokines with other host factors during the acute inflammatory response. This proposed research seeks to examine the interaction among factors believed to alter energy-regulatory systems during acute inflammation. These factors include proinflammatory cytokines (IL-1, IL-6, and TNF-tumor necrosis factor) which are thought to inhibit normal protein-energy conserving mechanisms, and hormones shown to be involved in long-term energy regulation (namely insulin, leptin, and glucocorticoids). Gender comparison will be made because reproductive hormones may act synergistically with multiple components of the inflammatory response to enhance anorexia and weight loss. An animal model of acute inflammation will be used in which body weight of the animal is normal, or has been experimentally increased or decreased at the time acute inflammation is induced. The interactive relationship of hormones and cytokines to food intake, meal pattern, micronutrient selection, and body weight at key time points following acute inflammation in male and female rats will be characterized. Because insulin, leptin, and glucocorticoid levels vary according to body weight, this approach provides an ideal in vivo method for studying the interaction among gender, hormones, and cytokines to determine their roles in inflammation-induced anorexia. Results of this research will provide information to*

guide the development of interventions that not only increase energy intake, but also promote maintenance of normal body composition during acute inflammation.

Thesaurus Terms:

*anorexia, bioenergetics, inflammation, weight loss
adipose tissue, body weight, corticosterone, dietary restriction, eating, estrus, gender
difference, glucocorticoid, hormone regulation /control mechanism, insulin, interleukin 1,
interleukin 6, leptin, tumor necrosis factor alpha
enzyme linked immunosorbent assay, laboratory rat, nutrition related tag*

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